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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/577,206	04/26/2006	Louis David Thomas	06-281	1391	
20306 7590 10/25/2007 MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE			EXAMINER		
			LIU, HARRY K		
32ND FLOOR CHICAGO, IL 60606		ART UNIT	PAPER NUMBER		
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		•	10/25/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions from many be available under the provisions of 37 CFR 1-18(i), in no event, howers, may a repty he timely filed If NO period for repty is specified above, the maximum statutory printed will apply and will expire SIX (8) MONTHS from the malling date of this communication. Failure to report within the set or extended period for repy will. by statule, cause the application to become ABANCHOOD (30 U.S. C. \$1.30). Any reply received by the Office lister base three months after the malling date of this communication, even if smelly filed, may reduce any evenine placetine management. Set of CFR 1-164(6): Status 1) Responsive to communication(s) filed on 26 April 2007. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-12 Is/are pending in the application. 4a) Of the above claim(s) is/are allowed. 6) Claim(s) 1-12 Is/are rejected. 7) Claim(s) is/are allowed. 6) Claim(s) is/are objected to. 8) Claim(s) is/are objected to by the Examiner. 9) The specification is objected to by the Examiner. 4pplicant may not request that any objection to the drawing(s) be held in aboyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) Hold Some complex of the priority documents have been received in Application No 1. Certified copies of the priority do		Application No.	Applicant(s)				
Harry Liu 3652		10/577,206	THOMAS ET AL.				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address — Period for Repty A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be availated under the previous of 3 CPR 1.136b, in the revent, however, may arely be timely little of the communication of 3 CPR 1.136b, in one vent, however, may arely be timely filled. If NO period for regly is specified above, the maintrum statutory period will apply and will explicat from the mailing date of this communication. Failur to region ABANDONED (SU S. C. § 132). Any reply received by the Office later han there months after the mailing date of this communication, even if timely filled, may reduce any elember parell time adjustment. See 37 CPR 179(b). Status 1) □ Responsive to communication(s) filled on 26 April 2007. 2a) □ This action is FINAL. 2b) □ This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) □ Claim(s) 1.18 is/are pending in the application. 4a) Of the above claim(s) is/are allowed. 6) □ Claim(s) 1.18 is/are rejected. 7) □ Claim(s) 1.18 is/are objected to by the Examiner. 10) □ The drawing(s) filled on 26 April 2007 is/are: a) □ accepted or b) □ objected to by the Examiner. Application Papers 9 □ The specification is objected to by the Examiner. 10 □ The drawing(s) filled on 26 April 2007 is/are: a) □ accepted or b) □ objected to by the Examiner. Application Papers 9 □ The drawing(s) filled on 26 April 2007 is/are: a) □ accepted or b) □ objected to by the Examiner. 10 □ The drawing(s) filled on 26 April 2007 is/are: a) □ accepted or b) □ objected to by the Examiner. 1	Office Action Summary	Examiner	Art Unit				
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time rays be available endor the provisions 43° CFR 1.136(a), in no event, however, may a rarely be timely filed. - Extensions of time rays be available endor the provisions 43° CFR 1.136(a), in no event, however, may a rarely be timely filed. - Extensions of time rays be available endor the provisions 43° CFR 1.136(a), in no event, however, may a rarely be timely filed. - Fallure to reply which are set or extended period for reply will, by attable, cause the application to become ABARONED (65 U.S. 5) 1333. - Any raphy excelled by the Midle time than there maining date of this communication, even it timely filed, may reduce any examine planet term adjustment. See 97 GFR 1.744(b). - Status 1) Responsive to communication(s) filed on 26 April 2007. - 2a) This action is FINAL. - 2b) This action is non-final. - 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. - Disposition of Claims 4) Claim(s) 1-18 is/are pending in the application. - 4a) Of the above claim(s) is/are allowed. - 5 Claim(s) is/are allowed. - 6 Claim(s) is/are objected to. - 7 Claim(s) is/are objected to. - 8 Claim(s) is/are objected to. - 8 Claim(s) is/are objected to. - 9 The specification is objected to by the Examiner. - 10 The drawing(s) filed on 26 April 2007 is/are: a) accepted or b) objected to by the Examiner. - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.35(a). - Replacement drawing sheet(s) including the correction is required if the drawing(s) be objected to see 37 CFR 1.35(d). - 11 Certified copies of the priority documents have been received in Application No - 12		Harry Liu	3662				
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Ethersions of time may be available under the provision of 3° CFR 1.15(a). In ne event, howers, may a reply be limely filed after SX (6) MONTIST from the mailing date of this communication. Failus to recy which the act or certified period for recy will. by datable, cause the application become ARAMODOL (30 u.S. C. § 133). Any reply received by the Office better than three months after the mailing date of this communication, even if timely filed, may reduce any searce place that mailing the communication is provided. This action is FINAL. 2b) ★ Claim(s) ★ 1.18 is/are pending in the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ★ Claim(s) ★ 1.18 is/are pending in the application. 4a) Of the above claim(s) ★ 1.18 is/are withdrawn from consideration. 5) ★ Claim(s) ★ 1.18 is/are rejected. 7) ★ Claim(s) ★ 1.18 is/are rejected. 7) ★ Claim(s) ★ 1.18 is/are objected to. 8) ★ Claim(s) ★ 1.18 is/are objected to by the Examiner. 10) ★ The drawing(s) filed on ★ 26 April 2007 is/are: a) ★ accepted or b) ★ objected to by the Examiner. Application Papers 9) ★ The above claim(s) ★ 1.18 is/are is/are objected to be the drawing(s) beheld in aboyance. Sea 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) sobjected to. Sea 37 CFR 1.121(d). 11) ★ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ★ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ★ Office of Informal Symbol Control of the priority documents have been received. 2. ★ Certified copies of the priority documents have been received in Application No. 3. ★ Office of Informal Symbol Control of the priority documents have been received in this National Sta	The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence address				
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Art Unit: 3662

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 2. Claims 1-6, 10-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Haskell (2006/0192711)

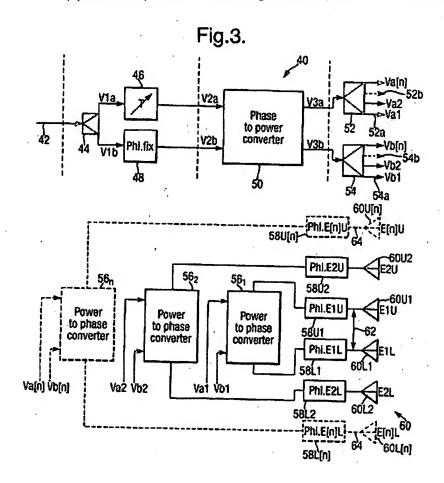
The applied reference has a common inventor Haskell with the instant application. Based upon the earlier effective U.S. filling date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 10, Haskell discloses a phased array antenna system with controllable electrical tilt including an antenna with multiple antenna elements has

a) means for providing two basis signals with variable relative delay (v1a, V1b, areticle 46, FIG. 3 below).

Art Unit: 3662

- b) splitting means for dividing the basis signal into signal components (see FIG. 3 below)
 - c) phase to power converting means (see FIG. 3 below)
 - d) power to phase converting means (see FIG. 3 below)



Regarding claims 2, 11, Haskell discloses the phase to power converting means is a plurality of hybrid radio frequency coupling devices ("hybrids") arranged to provide sums and differences of pairs of signal components, each pair having signal components from both basis signals (Abstract & paragraph 0034).

Regarding claims 3, 12, Haskell discloses the phase to power converting

Art Unit: 3662

means is a plurality of 180 degree hybrids arranged to provide sums and differences of pairs of signal components, each pair having signal components from both basis signals (Abstract & paragraph 0034).

Regarding claims 4, 13, Haskell discloses each pair has signal components of equal magnitude, but each pair's component magnitude is not equal to that of another pair (claim 12).

Regarding claims 5-6, 14-15, Haskell discloses the hybrids are first hybrids and the power to phase converting means incorporates a plurality of second hybrids arranged to generate antenna element drive signals (see FIG. 8).

Claim Rejections - 35 USC § 103

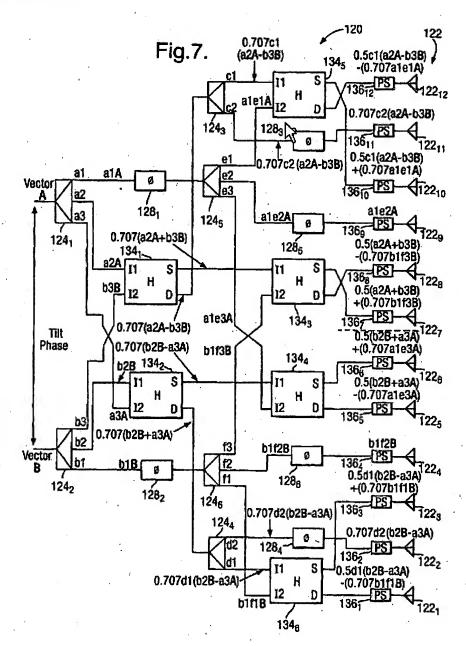
- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claims 7-9, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haskell (2006/0192711) as applied to claims 1,10 above, and further in view of Haskell (2006/0208944).

Regarding claims 7-9, 16-18, Haskell discloses all claim limitations in claims 1,10 rejection above except for first splitting is a three way (claim 7, 16), second splitting is a two way splitters (claims 8, 17) or same numbers of components extending from basis signal to antenna elements. However, Haskell teaches three way, two ways splitters

Art Unit: 3662

and 12 components (splitters plus hybrid combiners) correspond to 12 elements. (see FIG. 7 below). It would have been obvious to use two, three ways splitters and same number of components in order to achieve the purpose of driving 12/corresponding antenna elements.

Art Unit: 3662



Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Liu whose telephone number is 571-270-1338.

The examiner can normally be reached on Monday -Thursday and every other Friday...

Art Unit: 3662

Page 7

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-270-2338.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Harry Liu Examiner Art Unit 3662

October 24, 2007

THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600